WHAT IS CLAIMED IS:

1. A method of operating a system having a coil, said method comprising:

providing a switched amplified current to the coil; and

adding a second current to the switched amplified current, wherein the second current is substantially out of phase with the switched amplified current such that the coil receives current with substantially no switching frequency ripple.

2. A method in accordance with Claim 1 further comprising:

connecting a first inductor to the coil such that the switched amplified current is received from the first inductor; and

connecting a second inductor to the coil such that the second current is received from the second inductor.

3. A method in accordance with Claim 2 further comprising coupling the first inductor with the second inductor via a transformer.

4. A method in accordance with Claim 3 further comprising coupling the first inductor with the second inductor via a transformer wherein the second inductor is connected to a first end of a secondary side of the transformer and a first side of a capacitor is connected to a second end of the secondary side.

5. A method in accordance with Claim 4 further comprising connecting a second side of the capacitor to an end of the coil opposite the first inductor and second inductor.

6. A method in accordance with Claim 5 further comprising connecting a second capacitor between the first inductor and second inductor and the end of the coil opposite the first inductor and second inductor.

7. A method in accordance with Claim 3 further comprising:

connecting a first inductor to the coil such that the switched amplified current is received from the first inductor, wherein the first inductor has an inductance L_p; and

connecting a second inductor to the coil such that the second current is received from the second inductor, wherein the second inductor has an inductance L_{aux}, wherein $L_{aux}/L_p = (n-1)/n^2$, where n is a number of primary turns of the transformer divided by a number of secondary turns of the transformer.

8. A method in accordance with Claim 6 further comprising:

connecting a first inductor to the coil such that the switched amplified current is received from the first inductor, wherein the first inductor has an inductance L_p; and

connecting a second inductor to the coil such that the second current is received from the second inductor, wherein the second inductor has an inductance L_{aux}, wherein $\frac{\omega^2 \cdot C_{aux} \cdot L_{aux} - 1}{\omega^2 \cdot C_{aux} \cdot L_p} = \frac{n-1}{n^2}$, where n is a number of primary turns of the transformer divided by a number of secondary turns of the transformer, C_{aux} is a capacitance of the capacitor connected to the second end of the secondary side, and ω is an angular frequency.

9. A gradient coil system comprising:

at least one gradient coil comprising a first end and a second end;

a first inductor connected to said first end and providing a switched amplified current to said gradient coil; and

a second inductor connected to said first end and providing a second current to said gradient coil, the second current substantially out of phase with the switched amplified current such that said gradient coil receives current with substantially no switching frequency ripple.

10. A system in accordance with Claim 9 further comprising a transformer coupling the first inductor with the second inductor.

11. A system in accordance with Claim 10, wherein the second inductor is connected to a first end of a secondary side of the transformer, said system further comprising a capacitor wherein a first side of said capacitor is connected to a second end of the secondary side of the transformer.

12. A system in accordance with Claim 11, wherein a second side of the capacitor is connected to said second end of said gradient coil.

13. A system in accordance with Claim 12 further comprising a second capacitor connected between said first end of said gradient coil and said second end of said gradient coil.

14. A system in accordance with Claim 10, wherein said first inductor has an inductance L_p, said second inductor has an inductance L_{aux}, and wherein $L_{aux}/L_p = (n-1)/n^2$, where n is a number of primary turns of the transformer divided by a number of secondary turns of the transformer.

15. A system in accordance with Claim 13, wherein said first inductor has an inductance L_p, said second inductor has an inductance L_{aux}, and wherein $\frac{\omega^2 \cdot C_{aux} \cdot L_{aux} - 1}{\omega^2 \cdot C_{aux} \cdot L_p} = \frac{n-1}{n^2}$, where n is a number of primary turns of the transformer divided by a number of secondary turns of said transformer, C_{aux} is a capacitance of said capacitor connected to said second end of said secondary side, and ω is an angular frequency.

16. A magnetic resonance imaging (MRI) system comprising:

a main magnet configured to generate a substantially uniform magnetic field;

a radio frequency pulse generator configured to excite the magnetic field;

a gradient coil configured to generate gradients extending in different directions in the magnetic field, said gradient coil comprising a first end and a second end;

a first inductor connected to said first end and providing a switched amplified current to said gradient coil; and

a second inductor connected to said first end and providing a second current to said gradient coil, the second current substantially out of phase with the switched amplified current such that said gradient coil receives current with substantially no switching frequency ripple.

17. A system in accordance with Claim 16 further comprising a transformer coupling the first inductor with the second inductor.

18. A system in accordance with Claim 17, wherein the second inductor is connected to a first end of a secondary side of the transformer, said system further comprising a capacitor wherein a first side of said capacitor is connected to a second end of the secondary side of the transformer.

19. A system in accordance with Claim 18, wherein a second side of the capacitor is connected to said second end of said gradient coil.

20. A system in accordance with Claim 19 further comprising a second capacitor connected between said first end of said gradient coil and said second end of said gradient coil.

21. A system in accordance with Claim 17 wherein said first inductor has an inductance L_p, said second inductor has an inductance L_{aux}, and wherein $L_{aux}/L_p = (n-1)/n^2$, where n is a number of primary turns of the transformer divided by a number of secondary turns of the transformer.

22. A system in accordance with Claim 20 wherein said first inductor has an inductance L_p, said second inductor has an inductance L_{aux}, and wherein

$\frac{\omega^2 \cdot C_{aux} \cdot L_{aux} - 1}{\omega^2 \cdot C_{aux} \cdot L_p} = \frac{n-1}{n^2}$, where n is a number of primary turns of the transformer divided by a number of secondary turns of said transformer, C_{aux} is a capacitance of said capacitor connected to said second end of said secondary side, and ω is an angular frequency.